

A LISTING OF THE CLAIMS

1. (Previously Presented) A flat-type polymer electrolyte fuel cell including unit cells arrayed in a flat configuration, the flat-type polymer electrolyte fuel cell comprising:

a fuel-feed-side separator; and

an oxygen-feed-side separator,

each of the fuel-feed-side separator and the oxygen-feed-side separator comprise:

a collector portion including n unit conductive substrates wherein n is an integer of 2 or more, each conductive substrate having a plurality of through-holes through which fuel or oxygen passes, the conductive substrates are arrayed in a flat configuration via gaps,

and a pair of insulating frames which have n openings in alignment with an array position of said unit conductive substrates and are integrated in such a way as to hold the collector portion therebetween, wherein

1<sup>st</sup> to (n-1)<sup>th</sup> unit conductive substrates of the n unit conductive substrates that form the collector portion in one of the fuel-feed-side separator or the oxygen-feed-side separator, as counted from an end of an array direction thereof, and 2<sup>nd</sup> to n<sup>th</sup> unit conductive substrates of the n unit conductive substrates that form the collector portion in another of the fuel-feed-side separator or the oxygen-feed-side separator, as counted from the end of the array direction thereof are successively joined together by (n-1) connecting hinges.

2. (Previously Presented) The flat-type polymer electrolyte fuel cell according to claim 1, wherein:

in one of the fuel-feed-side separator and the oxygen-feed-side separator, the 1<sup>st</sup> to (n-1)<sup>th</sup> unit conductive substrates of the n unit conductive substrates that form the collector

portion, as counted from the end of the array direction, each includes, at a corner, a lug member that juts toward an adjoining unit conductive substrate,

the 2<sup>nd</sup> to n<sup>th</sup> unit conductive substrates as counted from the end of the array direction each includes, at a corner, a cutout that is in alignment with the lug member of a unit conductive substrate adjacent to an upstream side of the array direction and configured to from a gap with the lug member,

the (n-1) unit conductive substrates having the lug members each includes, at the lug member, a connecting hinge that juts in a direction substantially orthogonal to the array direction of the unit conductive substrates, and

the 2<sup>nd</sup> to n<sup>th</sup> unit conductive substrates of the n unit conductive substrates that form the collector portion in another separator, as counted from one end of the array direction thereof, are joined to the lug members by means of the (n-1) connecting hinges.

3. (Previously Presented) The flat-type polymer electrolyte fuel cell according to claim 1, further comprising:

electrode terminals provided at the n unit conductive substrates that form the collector portions in the fuel-feed-side separator and the oxygen-feed-side separator which are positioned at ends of the respective array directions and to which the connecting hinges are not connected.

4. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell in which unit cells are arrayed in flat configuration, characterized by comprising:

a collector portion in which two or more unit conductive substrates, each having a plurality of through-holes, are arrayed in flat configuration via gaps, and an electrical

insulating outer frame and a membrane-electrode assembly (MEA) side frame that are integrated in such a way as to hold said collector portion therebetween, wherein:

said outer frame comprises a plurality of minuscule openings in regions in alignment with an array position of said unit conductive substrates, and said membrane-electrode assembly (MEA) side frame comprises an opening in alignment with the array position of said unit conductive substrates.

5. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell according to claim 4, wherein each minuscule opening in said outer frame is larger in size than said through-holes that each unit conductive substrate has.

6. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell according to claim 4, wherein said outer frame and said membrane-electrode assembly (MEA) side frame are each formed of a resin, a resin/inorganic material composite, a metal having an insulating coating thereon, or ceramics.

7. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell in which unit cells are arrayed in flat configuration, characterized by comprising:

a collector portion in which two or more unit conductive substrates, each having a plurality of through-holes, are arrayed in flat configuration via gaps, and an electrical insulating outer frame and a membrane-electrode assembly (MEA) side frame that are integrated in such a way as to hold said collector portion therebetween, wherein:

said outer frame comprises an opening in alignment with an array position of said unit conductive substrates and a reinforcement provided across said opening, and said membrane-

electrode assembly (MEA) side frame comprises an opening in alignment with the array position of said unit conductive substrates.

8. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell according to claim 7, wherein said reinforcement on said outer frame comprises a plurality of belt-form members.

9. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell according to claim 7, wherein said outer frame and said membrane-electrode assembly (MEA) side frame are each formed of a resin, a resin/inorganic material composite, a metal having an insulating coating thereon, or ceramics.

10. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell in which unit cells are arrayed in flat configuration, characterized by comprising:

a collector portion in which two or more unit conductive substrates, each having a plurality of through-holes, are arrayed in flat configuration via gaps, and an electrical insulating outer frame and a membrane-electrode assembly (MEA) side frame that are integrated in such a way as to hold said collector portion therebetween, wherein:

said outer frame and said membrane-electrode assembly (MEA) side frame each includes an opening in alignment with an array position of said unit conductive substrates, wherein each unit conductive substrate is configured in such a way as to jut toward said opening in said membrane-electrode assembly (MEA) side frame.

11. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell according to claim 10, wherein each unit conductive substrate is domed in an extent smaller than an area of the opening in said membrane-electrode assembly (MEA) side frame.

12. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell according to claim 11, wherein said domed portion is in catenary shape.

13. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell according to claim 10, wherein each unit conductive substrate is projected in an offset shape with an area smaller than an area of the opening in said membrane-electrode assembly (MEA) side frame.

14. (Withdrawn) A separator for a flat-type polymer electrolyte fuel cell according to claim 10, wherein said outer frame and said membrane-electrode assembly (MEA) side frame are each formed of a resin, a resin/inorganic material composite, a metal having an insulating coating thereon, or ceramics.

15. (Previously Presented) The flat-type polymer electrolyte fuel cell according to claim 1, wherein the conductive substrates of the fuel-feed-side separator and the oxygen-feed-side separator and the (n-1) connecting hinges are the same material.

16. (Previously Presented) The flat-type polymer electrolyte fuel cell according to claim 1, wherein the conductive substrates of the fuel-feed-side separator and the oxygen-feed-side separator and the (n-1) connecting hinges are fabricated by a process wherein the fuel-feed-side separator and the oxygen-feed-side separator are joined together via the (n-1) connecting hinges.